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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/071,061	02/07/2002	Jui-Lin Hung	B-4498 619518-8	3405

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EXAMINER	
ECKERT II, GEORGE C	

ART UNIT	PAPER NUMBER
2815	

DATE MAILED: 06/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.	Applicant(s)
10/071,061	Hung et al.
Examiner	**Art Unit**
George C. Eckert II	2815

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *May 19, 2003*.

2a) ☐ This action is **FINAL.** 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-26* is/are pending in the application.

4a) Of the above, claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-6 and 9-26* is/are rejected.

7) ☒ Claim(s) *7 and 8* is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9) ☒ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on *Feb 7, 2002* is/are a) ☒ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☒ All b) ☐ Some* c) ☐ None of:

1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____
4) ☐ Interview Summary (PTO-413) Paper No(s). _____
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Election/Restriction

1. Applicant argues that the restriction requirement is improper because claims 15 and 22 are actually generic rather than an independent species from claims 1 and 9. This is persuasive and thus the restriction requirement is withdrawn.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Objections

4. Claim 22 is objected to because of the following informalities: on line 2, delete "Each" and insert --each-- in its place. Appropriate correction is required.

Claim Rejections - 35 U.S.C. § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Each of claims 1, 9, 15 and 22 include the limitation "an optimal position of laser spot defined above a substrate." However, this limitation does not make clear what structure is being defined. Also, the specification does not assist in defining what structure would constitute such a spot. In its broadest terms, any location above a substrate may be considered an optimal spot.

With regard to claim 9, the limitation "the laterals" lacks antecedent basis. With regard to claim 22, the limitations contained in lines 13-19 do not make clear what structure is being claimed. Specifically, it is not clear what structure is claimed on lines 13-14 which state "wherein each fuse structure has its own the position of laser spot on the second conductive layer." The recitation on lines 15-19 is unclear because it cites "the laterals of the portion" which lacks antecedent basis for both "the laterals" and "the portion"; also, the recitation includes the limitation "the position of laser spot" repeatedly but does not make clear what structure defines such a spot.

Claim Rejections - 35 U.S.C. § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-6, 9-19 and 22-26 are rejected under 35 U.S.C. 102(b) as being anticipated by US 6,008,716 to Kokubun. With regard to claims 1, 9, 15 and 22, Kokubun teaches, with reference to figures 9A and B, a fuse structure comprising:

an optimal position of laser spot defined above a substrate 1;

a first conductive layer 2 formed on part of the substrate;

a dielectric layer 3 formed on the substrate and the first conductive layer;

a second conductive layer 4 comprising the position of laser spot formed on part of the dielectric layer;

a third conductive layer 6 formed on the part of the dielectric layer 3 placed above the first conductive layer, wherein the third conductive layer is insulated from the first and second conductive layers; and

at least one conductive plug 5 penetrating the dielectric layer, to electrically connect the first conductive layer 2 and the second conductive layer 4.

With regard to claims 2-4, 6, 10-12, 14, 16, 17, 19, 23, 24 and 26, Kokubun teaches the use of aluminum and tungsten as the material for forming the first through third conductive layers (col. 20, lines 34-40). With regard to claims 5, 13, 18 and 25, Kokubun teaches that the dielectric material is silicon oxide (col. 20, lines 40-47). With regard to claims 9 and 22, Kokubun teaches that the array of fuse structures is arranged such that the overlaps of the first and second conductive layers is offset.

7. Claims 1-4, 6, 15-17, 19 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by US 6,218,721 to Niwa. Niwa teaches, with reference to figure 3A, a fuse structure comprising:

an optimal position of laser spot defined above a substrate (e.g. a location on layer 305);

a first conductive layer 302 formed on part of the substrate 301;

a dielectric layer 303 formed on the substrate and the firs conductive layer;

a second conductive layer 305 comprising the position of laser spot formed on part of the dielectric layer;

a third conductive layer 311 formed on part of the dielectric layer placed above the first conductive layer, wherein the third conductive layer is insulated from the first and second conductive layers; and

at least one conductive plug 304 penetrating the dielectric layer, to electrically connect the first conductive layer and the second dielectric layer.

With regard to claims 2-4, 6, 16, 17 and 19, Niwa teaches that the conductive layers are made of aluminum or tungsten or the like (col. 6, lines 1-10; see also col. 9, lines 40-52). With regard to claim 20, Niwa teach a passivation layer 306/307 having a window 308 formed on the second conductive layer, wherein the window exposes the second conductive layer comprising the position of laser spot.

8. Claims 15, 18, 20, 22 and 25 are rejected under 35 U.S.C. 102(a) as being anticipated by applicant's admitted prior art (AAPA). Applicant's APA, as shown in instant figures 1 and 2, teach a fuse structure comprising:

an optimal position of laser spot 110 defined above a substrate 100;

a first conductive layer M0 formed on part of the substrate;

a dielectric layer 120 formed on the substrate and the first conductive layer;

a second conductive layer M1 comprising the position of laser spot 110 formed on the dielectric layer; and

at least one conductive plug 130 penetrating the dielectric layer 120, to electrically connect the first conductive layer and the second conductive layer.

With regard to claim 22 as best understood, the device taught in figures 1 and 2 is considered to teach that each fuse structure (e.g. 220) is configured such that each laser spot 110 is not directly adjacent to a laser spot 110 on a neighboring fuse (e.g. 210 or 230).

With regard to claims 18 and 25, AAPA teaches that the dielectric is silicon oxide (page 2, lines 9-10). With regard to claim 20, AAPA teaches that the device comprises passivation layer 150 having a window 140 formed on the second conductive layer M1, wherein the window exposes the second conductive layer comprising the position of laser spot 110 (see figure 1).

Claim Rejections - 35 U.S.C. § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 5, 18 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Niwa. Niwa taught the device of claims 1 and 15 as discussed above but did not expressly teach that the dielectric or passivation layers were formed of SiO_2. Because SiO_2 is well known as an insulator in the art and is easily formed by one of several methods, its use is considered obvious in the device of Niwa.

Allowable Subject Matter

10. Claims 7 and 8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The additional references are cited for teaching the use of metal or other layers to reduce the possibility of damage due to laser irradiation.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to George C. Eckert II whose telephone number is (703) 305-2752.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Eddie Lee can be reached on (703) 308-1690. The fax phone number for this Group is (703) 308-7722.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.

GEORGE ECKERT
PRIMARY EXAMINER

GCE
June 13, 2003